

IN THE CLAIMS

Please amend the claims as follows:

1-6. canceled

7. (currently amended) A method for performing lock management for a flash copy in a shared storage system, said method comprising:

designating only one node within said shared storage system an owner node for metadata relating to all input/output (I/O) relationships of a region of storage;

designating remaining nodes within said shared storage system client nodes;

in response to a host I/O request arriving at one of said client nodes, suspending said host I/O request by said one client node and inquiring said owner node if said region of storage associated with said host I/O request has been copied;

placing a lock record by said owner node against an appropriate metadata for said region of storage associated with said host I/O request if said region of storage associated with said host I/O request has not been copied;

if said host I/O request is a Target Read, transferring data to a host by said one client node via a Flash Copy algorithm, and sending an UNL message to said owner node by said one client node at the completion of said data transfer;

if said host I/O request is a Target Write or Source Write, performing a copy-on-write by said one client node, and sending an UNLC request to said owner node by said one client node at the completion of said copy-on-write;

upon the receipt of said UNLC request,

marking by said owner node in its metadata a region affected;
removing said lock record;
informing any waiting requests that said region has been copied and
issuing an UNLD message to said one client node;
upon the receipt of said UNLD message, releasing said suspended write operation
by said one client node and completing said write operation to said host; and
removing said lock record by said owner node from its metadata table upon the
receipt of said UNL message.

8-12. canceled.

13. (currently amended) A computer storage medium having a computer program product for performing lock management for a flash copy in a shared storage system, said computer storage medium comprising:

computer program code for designating only one node within said shared storage system an owner node for metadata relating to all input/output (I/O) relationships of a region of storage;

computer program code for designating remaining nodes within said shared storage system client nodes;

computer program code for, in response to a host I/O request arriving at one of said client nodes, suspending said host I/O request by said one client node and inquiring said owner node if said region of storage associated with said host I/O request has been copied;

computer program code for placing a lock record by said owner node against an appropriate metadata for said region of storage associated with said host I/O request if said region of storage associated with said host I/O request has not been copied;

computer program code for, if said host I/O request is a Target Read, transferring data to a host by said one client node via a Flash Copy algorithm, and sending an UNL message to said owner node by said one client node at the completion of said data transfer;

computer program code for, if said host I/O request is a Target Write or Source Write, performing a copy-on-write by said one client node, and sending an UNLC request to said owner node by said one client node at the completion of said copy-on-write;

computer program code for, upon the receipt of said UNLC request,
marking by said owner node in its metadata a region affected;

removing said lock record;

informing any waiting requests that said region has been copied and issuing an UNLD message to said one client node;

computer program code for, upon the receipt of said UNLD message, releasing said suspended write operation by said one client node and completing said write operation to said host; and

computer program code for removing said lock record by said owner node from its metadata table upon the receipt of said UNL message.

14-18. canceled